CLAIMS

We claim:

1. A coin recycling machine for receiving coins, for sorting coins into a plurality of denominations and for dispensing coins as a plurality of sorted denominations, the machine comprising:

a housing;

an intake area on the housing for receiving batches of unsorted coins which are loaded into the machine by a user;

a sorting mechanism for receiving the batches of coins loaded into the machine and sorting the coins into a plurality of denominations;

a plurality of dispensing hoppers for holding the coins by denomination in unstacked piles by denomination for dispensing;

a plurality of bulk coin storage receptacles for receiving the coins from the sorter and holding the coins in unstacked piles by denomination for transfer to the dispensing hoppers;

coin transfer mechanisms for transferring coins from the bulk coin storage receptacle to the dispensing hoppers; and

a controller electronically connected to the sorter for calculating first totals for amounts of coins received through the intake area, the controller also being electrically connected to the dispensing hoppers for dispensing coins and accumulating second totals for coins being dispensed, and for making available the first and second totals for comparison.

2. The coin recycling machine of claim 1, wherein the controller also controls the coin transfer mechanisms for transferring coins from the bulk coin storage receptacle to the dispensing hoppers.

3. The coin recycling machine of claim 2, wherein the controller has a plurality of control circuits one for each denomination, which control transfer of coins from a

respective one of the bulk coin storage receptacle to a respective one of the dispensing hoppers.

4. The coin recycling machine of claim 1, wherein each of the second bulk coin storage receptacles has a capacity at least three times the capacity of one of the dispensing hoppers.

5. The coin recycling machine of claim 4, and further, wherein each of the bulk coin storage receptacles has a capacity at least ten times the capacity of one of the dispensing hoppers.

6. The coin recycling machine of claim 1, wherein said controller is able to total the coins being loaded into the machine in an input operation as well as counting of coins being dispensed in an output operation during a time interval in which the input operation is also being conducted.

7. The coin recycling machine of claim 1, further comprising diverters positioned near exits from the bulk coin storage receptacles for directing coins either to the dispensing hoppers or to coin bags.

8. The coin recycling machine of claim 1, wherein the bulk coin storage receptacles have lifting platforms for lifting coins from the receptacles to a predefined height for contact by skimmer mechanisms.

9. The coin recycling machine of claim 8, wherein the coin transfer mechanisms further comprise skimmer mechanisms mounted on the bulk coin storage receptacles for pushing coins on top of the unstacked piles from bulk coin storage receptacles to the dispensing hoppers.

10. The coin recycling machine of claim 1, wherein the bulk coin storage receptacles operate by gravity, and wherein the coin transfer mechanisms further comprise

mechanisms which allow coins to gravity feed downward from the bulk coin storage receptacles to the first plurality of receptacles.

11. The coin recycling machine of claim 1, the housing has a cash drawer receiving area adapted to receive a cash drawer having multiple compartments; and

wherein the coins are dispensed into the multiple compartments of the cash drawer by denomination.

12. The coin recycling machine of claim 1, wherein the controller includes memory for storing a plurality of user accounts with a balance per user of coins received and coins dispensed.

13. The coin recycling machine of claim 1, further comprising:

a card reader input device electrically connected to the controller for transferring inputs from a plurality of users to the controller; and

wherein the controller associates inputs from a plurality of users with cash balances of coins dispensed and received for respective users.

14. The coin recycling machine of claim 1, further comprising:

a touch screen input device electrically connected to the controller for transferring inputs from a plurality of users to the controller; and

wherein the controller associates inputs from a plurality of users with cash balances of coins dispensed and received for respective users.

15. The coin recycling machine of claim 1, further comprising:

a personal computer electrically connected to the controller for transferring inputs from a plurality of users to the controller; and

wherein the personal computer associates inputs from a

plurality of users with cash balances of coins dispensed and received for respective users.

16. The coin recycling machine of claim 1, further comprising a coin level sensor in each dispensing hopper and wherein the controller responds to a signal from the coin level sensor to actuate the coin transfer mechanisms to transfer coins from bulk coin storage receptacles to the dispensing hoppers.

17. The coin recycling machine of claim 1, wherein the controller responsive to the denomination sensors and responsive to inputs from a user in a first operating cycle of the machine to cause the receptacles to dispense an amount of coins sorted by denomination and to store the dispensed amount of coins in memory in association with a user account number, the controller being responsive to input of a batch of coins and the user account number in a second cycle to count the coins received, and store the amount of coins received and the amount of coins dispensed for comparison to determine a net amount of cash associated with the user.

18. A method of recycling coins, comprising:

dispensing coins by denomination from a plurality of dispensing hoppers and totaling the amounts dispensed by user;

loading batches of coins having a plurality of denominations into a machine and totaling amounts by user;

receiving the coins that are fed into the machine and sorting said coins by denomination, counting said coins and directing said coins to a plurality of bulk coin storage receptacles according to denomination;

transferring coins from said bulk coin storage receptacles by denomination to corresponding ones of said dispensing hoppers for dispensing to a user; and

comparing amounts of coins dispensed from the machine for a user with amounts of coins loaded into the machine by said user.

19. The method of claim 18, in which the totaling of coins being loaded into the machine can be carried out simultaneously with the counting of coins being dispensed in an output operation.

20. The method of claim 18, further comprising diverting coins either to the dispensing hoppers or to coin bags.

21. The method of claim 18, further comprising transferring coins from the bulk coins storage receptacles by lifting coins from the receptacles to a predefined height and rotationally skimming the coins into the dispensing hopper.

22. The method of claim 18, feeding the coins from bulk coin storage receptacles to the dispensing hoppers by gravity, and wherein the coin transfer mechanisms further comprise mechanisms which allow coins to gravity feed downward from the bulk coin storage receptacles to the first plurality of receptacles.

23. The method of claim 18, further comprising storing a plurality of user accounts with a balance per user of cash received and cash dispensed.

24. The method of claim 18, further comprising:

reading in identification inputs from a plurality of users; and

associating said identification inputs from a plurality of users with cash balances of cash dispensed and received for respective users.

25. The method of claim 18, further comprising entering the user identification inputs with a touch screen input device.

26. A method of recycling cash during a work shift, comprising:

responding to inputs from a user in a first operating cycle of a machine to cause an amount of coinage to be dispensed from a plurality of dispensing hoppers;

storing the amount of dispensed coinage in memory in association with a user account number, which is one of the inputs from the user;

responding to inputs from a user and a batch of coins put into the machine in a second operating cycle of the machine to total the coinage put into the machine and to store the coinage in bulk coin storage receptacles by denomination;

comparing the amount of coinage received in the second operating cycle with the amount of coinage dispensed in the first operating cycle to determine a net amount of coinage associated with the user account number; and

transferring coinage from the bulk storage receptacles to the dispensing hoppers when needed to maintain a predetermined level of coinage in the dispensing hoppers for dispensing to a user.

27. The method of claim 26, further comprising responding to coins being input into the machine simultaneously with dispensing coins from the machine.